Network and system environment for the MTCC

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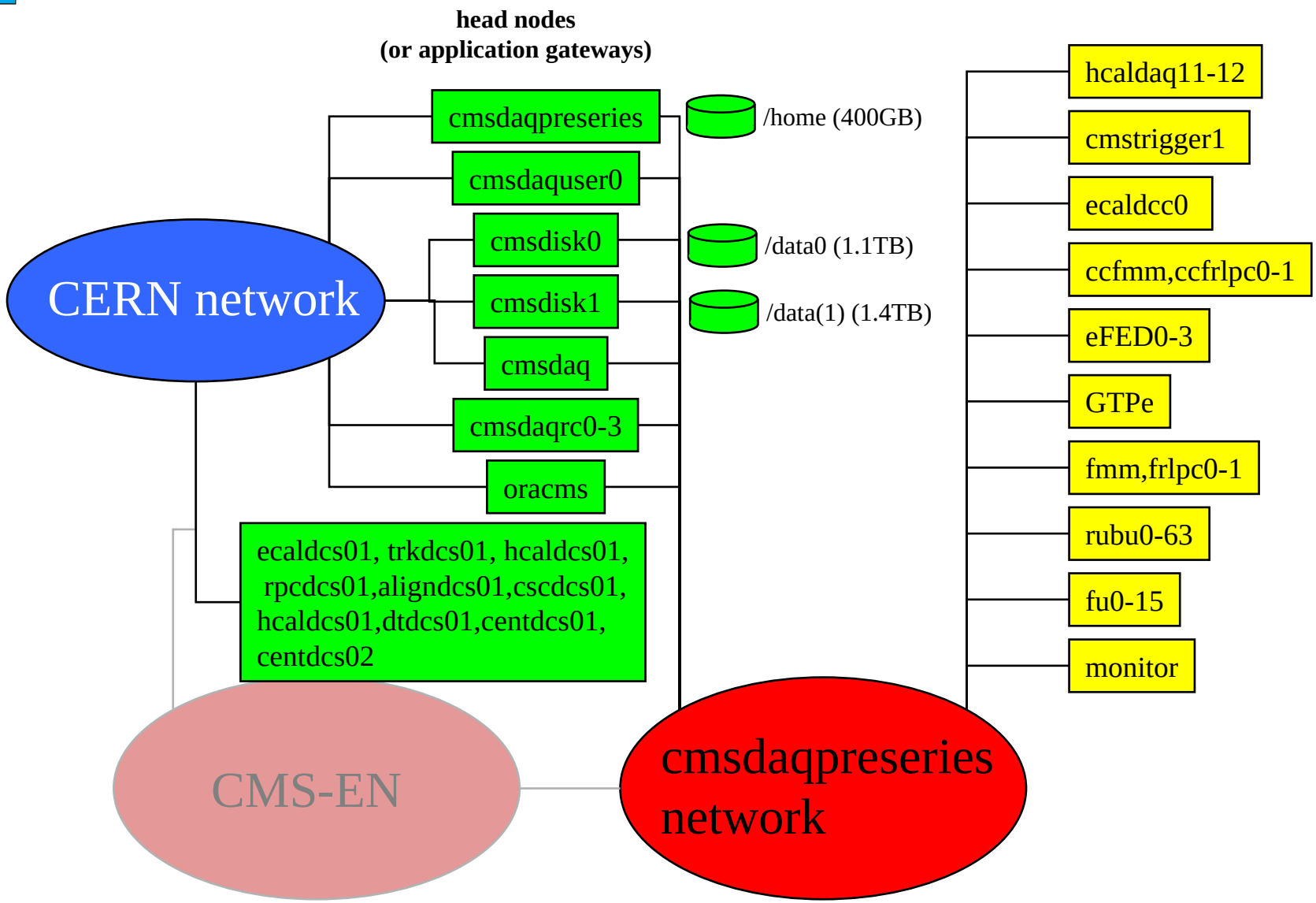
Current status

- Network
  - Network layout
  - Servers
  - Future
- System aspects
  - Login and home directories
  - Execution of software
  - Future

MTCC/DAQpreseries network



Servers (head nodes)

- cmsdaqpreseries
  - DHCP server, DNS server, LDAP server
  - logbook server
  - NFS server for home directories
- cmsdisk0 and 1
  - NFS servers for physics data and sending to CASTOR
- oracms: oracle server
- cmsdaq
  - web proxy for external access of internal pages
  - Incoming HTTP and HTTPS from outside CERN as well
- cmsdaquser0
  - General purpose login machine
- cmsdaqrc0-3
  - Run control servers
- ecaldcs01, trkdcs01, hcaldcs01, rpcdcs01,aligndcs01,cscdcs01, hcaldcs01,dtdcs01,centdcs01, centdcs02
  - DCS servers
  - Connection to preseries network not yet done, probably not required

Network evolution

- Project for CMS-EN in green barrack
  - Make cmsdaqpreseries part of CMS-EN
  - Implies IP re-numbering
  - Transparent for applications relying on DNS (normally all of them)
  - Mostly impacts the windows machines
  - “Trust” in CMS-EN for central IT windows domain servers
  - Allows move of windows machines (i.e. DCS) to the private network
    - Not on CERN network anymore
    - Depends on the controlled systems as well (???)

Login and home directories

- Login with the AFS account name and password on one head node
- Home directory local to cluster on /home (backed up by central IT service)
- The AFS home directory is available as well, but only on head nodes
- Ssh to nodes on the private network thanks to public/private keys in home directory
  - no AFS/Kerberos involved beyond head nodes
- No quotas for the moment
  - Rely on people's good will or not?

Execution of software

- Software installed in and run from home directories of common accounts
  - Currently: daqpro daqdev toppro topdev hcaldev hcalpro ecaldev ecalpro rpcdev rpcpro dtdev dtpro cscdev cscpro trackerdev trackerpro triggerdev triggerpro ltcdev ltcpro pixeldev pixelpro daqdev2
- Each common account has a corresponding group
  - Members of the group can work on the common home directory
    - Have to do: “newgrp daqpro; umask 0002”
    - Shell macros in the works (for bash and tcsh): “become daqpro”
  - Execution and stop/kill of application as the common account using sudo:
    - sudo –u daqpro xdaq.exe…

System evolution

- Login system in CMS (final) yet undecided
  - Rely on the CMS-wide AFS/Kerberos system
  - …or use our own Kerberos environment for authentication
- Deployment of software via Quattor
  - Fellow to come (has developer experience in Quattor)
  - This is required as when system grow to full size, NFS won't be able to cope anymore
  - Implies stability of software
  - Requires packaging as RPMs